

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A method for the demodulation of radio navigation signals (s(t)) transmitted in spread spectrum and comprising a data channel which is modulated by a navigation message and a pilot channel which is not modulated by a navigation message, the data channel and the pilot channel being combined into one multiplexing scheme in order to modulate a carrier, this method ~~consisting in comprising~~ subjecting the signals of the pilot and data channels to despreading processing and in demodulating the ~~despread-despreaded~~ data signal (r_d) in order to obtain the navigation message $\langle d(t) \rangle$, ~~characterized in that wherein~~ the demodulation of the despread data signal (r_d) used to obtain the navigation message $\langle d(t) \rangle$ is performed with the aid of the carrier (r_p) obtained from the despreading processing of the pilot channel and wherein the despreading processing is performed by code tracking processing, combined with carrier phase or frequency tracking processing in which the code tracking processing is performed with the aid of a delay-lock-loop (DLL) and the carrier tracking processing, is performed with the aid of a frequency-lock loop (FLL).
2. (currently amended) The method as claimed in claim 1, ~~characterized in that~~ wherein the pilot channel and the data channel of the signal to be demodulated are time-multiplexed.

3. (currently amended) The method as claimed in claim 1, ~~characterized in that~~
wherein the pilot channel and the data channel of the signal to be demodulated are
phase-multiplexed.
4. (cancelled)
5. (currently amended) The method as claimed in claim 1, ~~characterized in that~~
wherein the pilot channel and the data channel of the signal to be demodulated are
multiplexed in accordance with a scheme in which the carrier contains at least the data
channel and the pilot channel of the signal to be demodulated.
- 6.-7. (cancelled)
8. (currently amended) The method as claimed in claim 1, ~~characterized in that~~
wherein it is applied to the demodulation of satellite navigation signals of the GPS-IIF
L5, L2C type, or to the demodulation of satellite navigation signals transmitted by the
GALILEO system, or transmitted by ground stations, by modernized GLONASS
satellites or by COMPASS or QZS satellites.
9. (currently amended) A receiver for radio navigation signals transmitted in spread
spectrum and comprising a data channel which is modulated by a navigation message
and a pilot channel which is not modulated by a navigation message, the receiver
comprising a despreading and tracking device comprising a spreading code generator

which supplies spreading codes (E_P , L_P , P_P , E_D , L_D , P_D , NH_data , NH_pilot) and means for applying the spreading codes to the signals of the pilot channel and data channel in order to obtain despread pilot and data signals, ~~characterized in that it~~ wherein the receiver comprises a demodulator which uses the despread pilot signal to demodulate the despread data signal in order to obtain the navigation message (d), said receiver comprises means for estimating or tracking the frequency or phase of the despread pilot channel signal and wherein it comprises a frequency-lock loop (FLL) for tracking the pilot signal and a delay-lock loop (DLL) which drives the spreading code generator.

10-11. (cancelled)

12. (currently amended) The receiver as claimed in claim ~~11~~ 9, ~~characterized in that~~ wherein the frequency-lock loop (FLL) comprises a discriminator of extended arctangent form.

13. (currently amended) The receiver as claimed in claim ~~11~~ 9, ~~characterized in that~~ wherein the frequency-lock loop (FLL) comprises a first-order or second-order loop filter which is adapted to the dynamics of the received signals.

14. (currently amended) The receiver as claimed in claim ~~11~~ 9, ~~characterized in that~~ wherein the output of the filter of the frequency-lock loop (FLL) is coupled to the delay-lock loop (DLL), the delay-lock loop comprising a zero-order loop filter.

15. (currently amended) The receiver as claimed in ~~any of claims 11~~claim 9, ~~characterized in that~~wherein the delay-lock loop (DLL) comprises a discriminator which is applied to the pilot signals and to the data signals, the data signals being weighted by a coefficient which depends on the signal-to-noise spectral density ratio (C/N_0) of the received signals.

16. (currently amended) The receiver as claimed in ~~claim 11~~9, ~~characterized in that~~wherein the frequency-lock loop (FLL) is designed to receive Doppler velocity aid from a navigation system.